



Rocky Mountain
Remediation Services L L C
protecting the environment

PROCEDURE

PROTECTED AREA DECONTAMINATION FACILITY OPERATIONS

RMRS/OPS PRO 141

Revision 0

Date Effective 12/30/98

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APPROVED

J Russ Cirillo Environmental Restoration

1 PURPOSE

This procedure outlines the solid and liquid management processes used at Rocky Flats Environmental Technology Site (RFETS) Protected Area Decontamination Facility (PADF). Solids and liquids are generated from decontamination activities at the PADF and temporary decontamination stations in the Protected Area.

2 SCOPE

This procedure applies to all RFETS employees and subcontractors who conduct decontamination operations at the PADF or temporary stations.

This procedure addresses the following topics:
Maintaining and operating the PADF.

This revision is a total rewrite and revision bars are omitted. This revision supersedes 5-21000-OPS-FO 12, Revision 3.

Effective decontamination procedures are required to minimize the potential for cross contamination, offsite contaminant migration, and personnel exposure to contaminants. Heavy equipment and environmental material containers may become contaminated when used in a work area characterized as potentially contaminated or where field monitoring indicates the possible presence of contamination.

A Protected Area Decontamination Facility exists at RFETS, as shown in Appendix 1, Decontamination Facility Location. The typical Decontamination Facility process flow diagram is shown in Appendix 2, Typical Decontamination Facility Process Flow Diagram. A Decontamination Facility consists of three functional areas: the equipment decontamination pad, the environmental liquids management area, and the drum transfer area. A typical Decontamination Facility pad Layout is shown in Appendix 3, Typical Decontamination Pad Layout.

Additional equipment-specific decontamination guidance is available in the following procedures

- 5-21000-OPS-FO 03, General Equipment Decontamination-FO 03
- 5-21000-OPS-FO 04, Heavy Equipment Decontamination
- 4-H66-ENV-OPS-FO 05, Handling of Purge and Development Water
- 4-E12-ER-OPS-FO 06, Handling of Personal Protective Equipment
- 5-2100-OPS-RMRS/OPS-PRO 112, Handling of Field Decontamination Water and Field Wash Water
- 5-21000-OPS-FO 08, Handling of Drilling Fluids and Cuttings

3 DEFINITIONS

Decontamination Facility A fixed facility that usually includes a concrete pad and bermed area equipped with a sump, pumps, and pressurized sprayers used to decontaminate large items that cannot be conveniently decontaminated in a relatively uncontrolled environment. The terminology Decontamination Facility should not be interpreted to refer to any specific RFETS Decontamination Facility.

Decontamination Facility Users. Personnel using the facility to decontaminate their own equipment.

Sump. The initial collection for sediments and decontamination liquids generated at the Decontamination Facility.

Equipment Decontamination pad equipment includes a curtain system, a sump for collection of environmental liquids and sediments, and a pumping system for moving fluids from the sump to the environmental liquids management area.

The PADF consists of a concrete pad capable of supporting large equipment. The entrance and exit are sloped and curbed to contain and collect environmental liquids, solids, and sludge generated during cleaning operations. The approaches to the pad are sloped to allow equipment to be driven onto and off of the facility. A sump is located in the center of the pad to collect decontamination liquids and solids.

The PADF typically uses gasoline-powered pumps, generators, high-pressure steam cleaners and a propane system. A typical pump setup is shown in Appendix 3.

The environmental liquids management area consists of a bermed area North of the pad containing large storage tanks. Snow melt and rain water collected in the bermed area are transferred to ground surface. Secondary containment is installed under the entire Decontamination Pad.

5 RESPONSIBILITIES

Decontamination Facility Subcontractor

- Coordinates with the Facility Manager for efficient use of the Decontamination Facilities
- Conducts decontamination of equipment
- Maintains facility equipment according to manufacturing instructions
- Inspects facility and maintains records and log books
- Winterizes equipment
- Pumps containments and sumps

Health and Safety Specialists (HSS)

- Performs Decontamination Facility inspections
- Ensures that all Decontamination Facility operations are performed safely and in accordance with the Health and Safety Plan (HASP)
- Conducts weekly or monthly radiological surveys at the Decontamination Facility in accordance with Health and Safety Practices and Radiological Safety Practices
- Provides Daily Health and Safety briefings
- Conducts Health and Safety and Radiological support of decontamination operations
- After the sump is pumped conduct Informal Radiological Surveys According to the Radiological Safety Practices Manual (RSP)
- Surveys for removable contamination inside hose ends and fittings
- Conducts direct measurements and removable surveys after the suction head (sunflower) surface has dried

Environmental Restoration Facility Project Manager

- Ensures implementation of this procedure
- Provides appropriate equipment to the subcontractor
- Supervises the Decontamination Facility Subcontractor in the operation and maintenance of the Decontamination Facilities
- Coordinates with plant trucking for transfer of waters to the Consolidated Water Treatment Facility (CWTF) or other facility

6 TRAINING

Decontamination Facility Users will have the following training

- 40-Hour OSHA Occupational Safety and Health Administration
- Radiation Worker, Level II (if required)
- General Employee Training
- Decontamination Facility User Training & Qualification (if required)
- Building 966 Indoctrination

7 MATERIALS AND EQUIPMENT

Decontamination Facility Subcontractor

The following equipment may be stored at or near the Decontamination Facility

- Tanks with secondary containment for the collection and storing of environmental liquids and sediments
- Moveable tanks for transferring clean water
- Piping and fittings to transfer water
- Hoses to transfer environmental liquids
- High pressure steam cleaner
- Forklift or equivalent equipment outfitted with a drum grabber
- Drum rack designed to hold empty drums in position to drain decontamination liquids from the drum interior
- Trash can for holding environmental materials
- Plastic sheeting
- Long and short handled brushes
- Wire brushes
- Wash and rinse buckets
- Paper towels
- Anemometer (may be located elsewhere on site) for determining the wind speed
- Propane tank, piping and heater

Decontamination Facility User

Provide the following supplies for use at the Decontamination Facility

- PPE as required by the HASP

8 INSTRUCTIONS-Maintaining and Operating the Decontamination Facility

This section is organized topically for various operational tasks associated with the operation of the Decontamination Facility

NOTE *Specific operating instructions and safety guidelines for the Decontamination Facility equipment are found in 4-111-ER-OPS-FO 30, Environmental Restoration Contractor s Yard Equipment Operation.*

PLANNING AND COORDINATION

Decontamination Facility Subcontractor

[1] Ensure that Decontamination Facility operations are conducted in accordance with the Decontamination Facility HASP

[2] Ensure all personnel review the Decontamination Facility HASP and determine the appropriate PPE to be used during the various Decontamination Facility operations

[3] Ensure all personnel have completed the necessary Decontamination Facility training

[4] Maintain a roster of Decontamination Facility Users and a point of contact to receive information regarding the operation of the Decontamination Facility

[5] Establish a priority of use for the Decontamination Facility

[6] Schedule foreseeable periods of downtime and notify other contractors of both scheduled and unscheduled periods of downtime

[7] Schedule the use of rough terrain forklift and skid loaders

[8] Coordinate with RFETS Environmental Restoration Project Manager for Tanker Truck Requirements

[9] Coordinate schedules with the Decontamination Facility Users and Environmental Restoration Facility Manager at the daily Plan of the Day (POD) meeting

Decontamination Facility Users

[1] Schedule use of the Decontamination Facility on the Plan of the Day (POD)

[2] Coordinate with the Decontamination Facility Subcontractor on an as-needed basis on such items **not** scheduled during the POD meeting

NOTE The Decontamination Facility may NOT be able to support Facility User activities without 24-hour notice
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[3] Review 5-21000-OPS-FO 03 and 5-2100-OPS-FO 04 before initiating any Decontamination operations

[4] Review the Decontamination Facility HASP to determine the appropriate PPE to use during the various Decontamination Facility operations

DECONTAMINATION FACILITY INSPECTIONS AND REPAIRS

Decontamination Facility Subcontractor

[1] Visually inspect the Decontamination Facility to verify the required equipment and supplies are on hand and operational

[2] Complete Form RMRS-OPS PRO-141 Form 1, shown in Appendix 4,
Decontamination Pad Equipment Inspection Checklist

[A] Record the date in the form heading

[B] Inspect each item on RMRS-OPS PRO-141 Form 1 for acceptability,
checking either the *Acceptable* or *Nonacceptable* block

[C] Notify the Environmental Restoration Facility Manager immediately of any
unacceptable item

[D] Record the liquid transfer information

[F] Print name, subcontractor name and phone number, and sign

[3] **IF** the curtains have any holes or tears greater than 1 inch in diameter,
THEN replace or repair the damaged curtain

[4] Check oil and fuel levels on Decontamination Facility equipment
IF oil or fuel levels are low,
THEN fill equipment with the required fluid

[5] Monitor the leak detection system well with a Photoionization Detectors (PID)

[6] Prepare the steam cleaner for daily operations per the manufacturer's instructions

ROUTINE MAINTENANCE OF THE DECONTAMINATION FACILITY

Decontamination Facility Subcontractor

[1] Perform routine maintenance on equipment by following the instructions in the
equipment owner manuals and the applicable procedures

[2] Fill the clean water tank to supply water for decontamination

[3] Pump the liquids from the sump into a storage tank in accordance with the subsection
Transferring Environmental Liquids from the Decontamination Facility Sump

NOTE	Nitrile gloves or surgeons gloves are required when disconnecting hoses or handling the sunflower after pumping the sump
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- [4] **IF** sediment levels in the sump are at or below the sump grates
THEN handle the sediment in accordance with the section titled Transferring Sediments from the Sump into Drums Sections

- [5] Drain and winterize all equipment as required

NOTE DO NOT use antifreeze in any of the pressurized spray systems

- [6] **WHEN** the containers at the Decontamination Facility are full of waste PPE
THEN dispose of the waste PPE in accordance with 4-E12-ENV-OPS-FO 06, Handling of Personal Protective Equipment

Transferring Environmental Liquids from the Decontamination Facility Sumps

The function of the sump sediment transfer system is to separate solids from liquids. The liquids are transferred to storage tanks and solids returned to the sump. Liquids are pumped from the sump when they are at or below the sump grates.

NOTE *Emergency shutdown procedures are initiated when there is a problem with the transfer of liquid from the sump to the separation equipment. In the event of an emergency shutdown, contact the Project Manager.*

CAUTION

Failure to monitor the transfer of liquids into storage tanks may result in an overflow into the secondary containment

Decontamination Facility Subcontractor

- [1] **WHEN** the liquids are at or below the sump grates,
THEN transfer environmental liquids collected in the Decontamination Facility sump with a pump into a storage tank
- [2] Connect the sump sumpflow to the trash pump suction inlet
- [3] Connect a transfer hose to the trash pump outlet and to the storage tank filling hose. Each storage tank hose is numbered to correspond to the storage tank.
- [4] Prime the trash pump with water
- [5] Start the trash pump
- [6] Transfer water until the pump cannot draw anymore water

- [7] Turn off the trash pump

CAUTION

Shut down the pump during problems with liquid

- [8] **WHEN** the storage tank is filled to within 1 foot of the top,
THEN disconnect the transfer hoses at the storage tank manifold connection
- [9] Close the manifold valve for the filled storage tank
- [10] Secure the manifold cap for the filled storage tank
- [11] Disconnect all pumps and hoses used to transfer
- [12] Drain the liquid from the hoses into the Decontamination Facility sump
- [13] Direct an HSS survey hose ends and fittings
- [14] Drain the pumps used during liquid transfer

Transferring Well Purge Water into Sediment Tanks

Environmental liquids are containerized, handled and transferred to the Decontamination Facility in accordance with RMRS/OPS-PRO 112, Handling of Field Decontamination Water and Field Wash Water, and 5-21000-OPS-FO 10 Procedure 4-H66-ENV-OPS-FO 05, contains the process for handling well purge water

Decontamination Facility Personnel

- [1] Connect the purge water inlet hose to a trash pump
- [2] Connect the pump outlet hose to the storage tank to be filled.
- [3] Place the inlet hose in the purge water tank to be emptied
- [4] Start the pump and operate until the purge tank is empty
- [5] Shut the pump off
- [6] Remove hoses from the trash pump

Transferring Liquids to Tanker Trucks from Storage Tanks

Decontamination ER Manager

[1] Arrange for a tanker to be brought to the decontamination Facility with a Security escort (if required)

Decontamination Facility Subcontractor

[1] Place the PVC piping device into the storage tank to be emptied

[2] Connect PVC piping device to Number 11 transfer hose

[3] Connect hose Number 11 outlet to a transfer hose

[4] Connect the transfer hose to a trash pump suction inlet

[5] Connect a second transfer hose to the trash pump outlet

[6] Connect a 4-inch to 2-inch cam lock conversion to the other end of the second transfer hose

[7] Connect this hose to the tanker truck rear inlet

[8] **IF** the tanker truck is NOT parked on the Decontamination Pad
THEN place secondary containment under all hose connections and valves

[9] Don fall safety protection equipment required and open the top lid of the tanker truck to equalize pressure Ensure Security guards are present (if required) when lid is open

[10] Remove fall safety protection equipment

[11] Open the valves on the rear and bottom of the tanker truck

[12] Start the trash pump

[13] Continue to pump water until the water level in the storage tank is at the sediment level

[14] Turn off trash pump

[15] Close tanker truck bottom and rear valves

[16] Close transfer hose valve

[17] Don fall safety protection and close the tanker lid Place a seal over closed lid (if required) with security guards present

- [18] Remove fall safety protection equipment
- [19] Drain the 1-inch piping on the tanker truck bottom into the sump
- [20] Drain the hose from the pump outlet into the sump
- [21] Confirm the water from the pump suction side drains back into the storage tank
- [22] Drain the pump
- [23] Remove the PVC piping device from the storage tank, while wearing Nitrile gloves
- [24] When the PVC device is dry have an HSS survey the hoses and fittings used during the transfer
- [25] Label the tanker truck in accordance with RFETS Onsite Transportation Manual
- [26] Notify the Facility Project Manager the tanker is ready for movement

Transferring Sediments from the Sump into Drums

The preparation of the drums and equipment is completed before the drumming activities begin

Decontamination Facility Personnel

- [1] Request drums from the RFETS warehouse
- [2] Obtain and stage drums on the Decontamination Facility Pad
- [3] Prepare drums as outlined in the Waste Generating Instruction (WGI)
- [4] Record the drum numbers on Form FO 10A, Drum Field Log Form, and initiate an onsite waste traveler
- [5] Prepare ancillary equipment
- [6] Don the appropriate PPE in accordance with the Decontamination Facility HASP
- [7] Transfer the sediment into the drum
- [8] Layer an approved sorbent material as outlined in the WGI
- [9] **WHEN** the sediment reaches level specified in the WGI,
THEN begin to fill the next drum

- [10] Close the drums as outlined in the WGI
- [11] Tighten the drum lid band bolt as specified
- [12] Clean off the outside of the drum
- [13] Label drum in accordance with 5-21000-FO 10
- [14] Decontaminate all the equipment used during the process
- [15] Arrange for proper storage of the drum(s) or have Trucking pick up the drum(s)

Decontamination Operations at the DF

All decontamination operations at the Decontamination Facility are conducted in accordance with 5-21000-OPS-FO 04. The Decontamination Facility Users are responsible for the decontamination of their respective equipment. Decontamination Facility Pad personnel are responsible for the decontamination of RFETS equipment.

WARNING

Failure to cease all decontamination operations when the wind alarm is sounding could result in the release of contamination to the surrounding area

Decontamination Facility Users

- [1] Submit radiological surveys to Decontamination Facility HSS and have the HSS approve equipment transfer onto the Decontamination pad
- [2] Don appropriate PPE
- [3] Observe all of the health and safety requirements posted at the Decontamination Facility and presented in the Decontamination Facility HASP
- [4] **IF** the high pressure steam cleaner is used,
THEN open the curtains
- [5] **IF** the planned decontamination activities are likely to cause the sump to overflow,
THEN before starting decontamination activities pump the Decontamination Facility Sump
- [6] While conducting decontamination activities, use the Buddy System in accordance with the Decontamination Facility HASP
- [7] Decontaminate items from different work areas separately to prevent cross contamination

[8] Steam clean all surfaces within the curtained portion of the pad including the curtains

[9] Close and tie down curtains

[10] Return stands and equipment to the specified areas

[11] Remove PPE and handle in accordance with 4-E12-ENV-OPS-FO 06

[12] Complete logbook entries

Decontamination Facility Satellite Tank Transfers

Decontamination Facility Users

[1] Log in at the Decontamination Facility

[2] Don the proper PPE

[3] Transfer the satellite tank to Decontamination Facility sump or sediment tanks as directed by the Decontamination Facility Subcontractor personnel

[4] **Pour or Pump** liquids carefully into the sump or sediment tanks

[5] Remove and dispose of PPE in accordance with 4-E12-ENV-OPS-FO 06

[6] Notify Decontamination Facility Subcontractor upon completion of the transfer operation and departure from the Decontamination Facility

9 0 RECORDS

Management of all records is consistent with 1-77000-RM-001, Records Management Guidance of Records Sources

Decontamination Facility Subcontractor

[1] Ensure the original and one copy, as required, of the following quality assurance records are transmitted to the Environmental restoration File Center in accordance with 2-G18-ER-ADM-17 01, Records Capture and Transmittal

- Form FO 04-A3, Equipment Decontamination/Wash Checklist and Record
- Form RMRS-OPS PRO-141 Form 1, Decontamination Pad Equipment Inspection List
- Form FO 10A, Drum Field Log Form
- Form FO 10B, Drum Field Log QA/QC Form
- Form EMRG 1 1B, Contamination Survey Form
- Activities log book

Submission of record copies to the Environmental Restoration File Center satisfies Administrative Record requirements as defined in 2-S65-ER-ADM-17 02, Administrative Record Document Identification and Transmittal

There are no non-QA records generated by this procedure

10 0 REFERENCES

Health and Safety Practices Manual

Main and Protected Area Decontamination Facilities, Health & Safety Plan

Radiological Safety Practices Manual

RF/ER-MP-QAPD, RFP Environmental Restoration Management Quality Assurance Program Description, Section 5 0, Work Processes

1-94700-Traffic-110, Onsite Transportation Manual

1-10000-HWR, Hazardous Waste Requirements Manual

4-E12-ENV-OPS-FO 06, Handling Personal Protective Equipment

4-F99-ENV-OPS-FO 23, Management of Soil and Sediment Investigation-derived Materials

4-H66-ENV-OPS-FO 05, Handling of Purge and Development Water

5-21000-OPS-FO 03, General Equipment Decontamination

5-21000-OPS-FO 04, Heavy Equipment Decontamination

RMRS/OPS-PRO 112, Handling of Field Decontamination Water and Field Wash Water

5-21000-OPS-FO 08, Handling of Drilling Fluids and Cuttings

5-21000-OPS-FO 10, Receiving, Labeling, and Handling Environmental Materials Containers

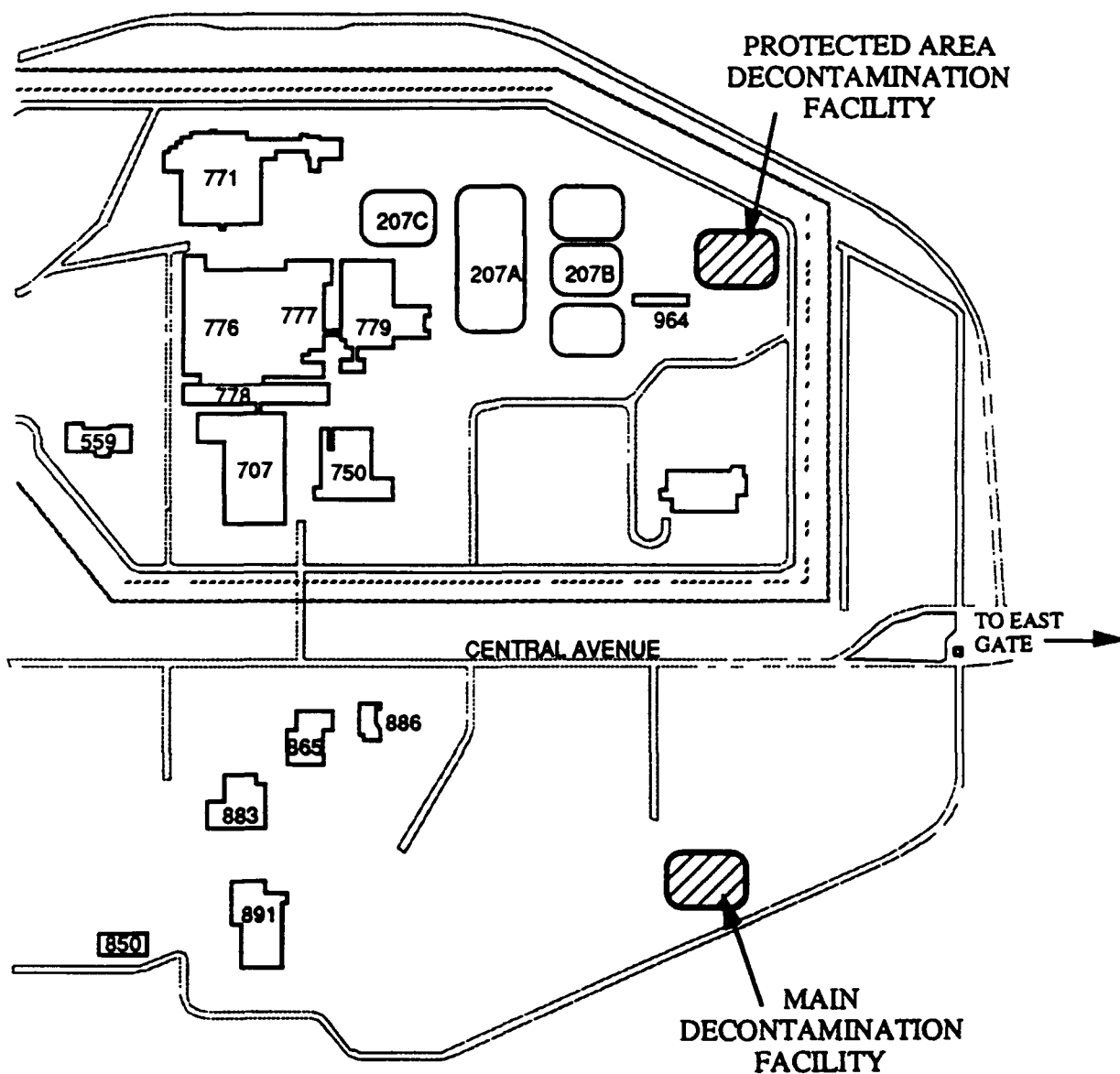
5-21000-OPS-FO 15, Photoionization Detectors and Flame Ionization Detectors

4-111-ER-OPS-FO 30, Environmental Restoration Contractor's Yard Equipment Operation

APPENDIX 1

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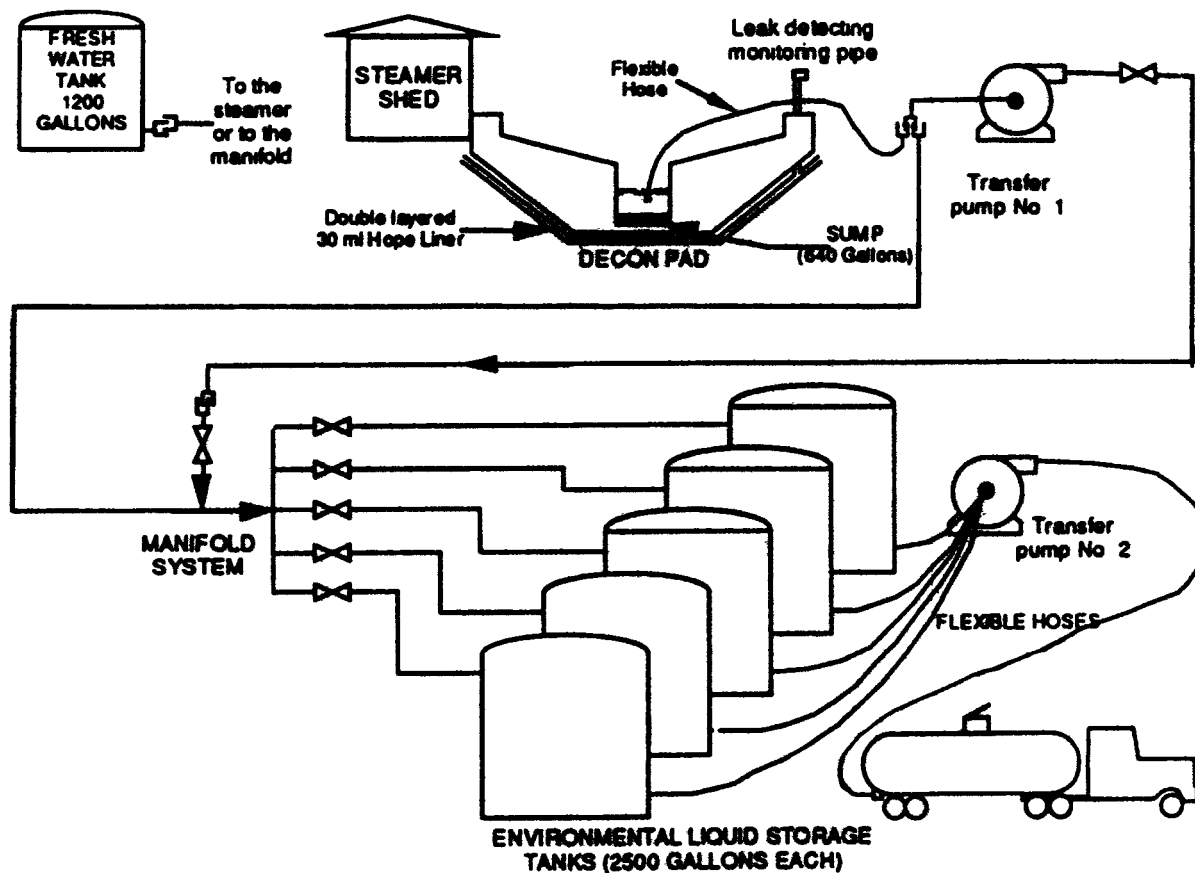
DECONTAMINATION FACILITY LOCATIONS



APPENDIX 2

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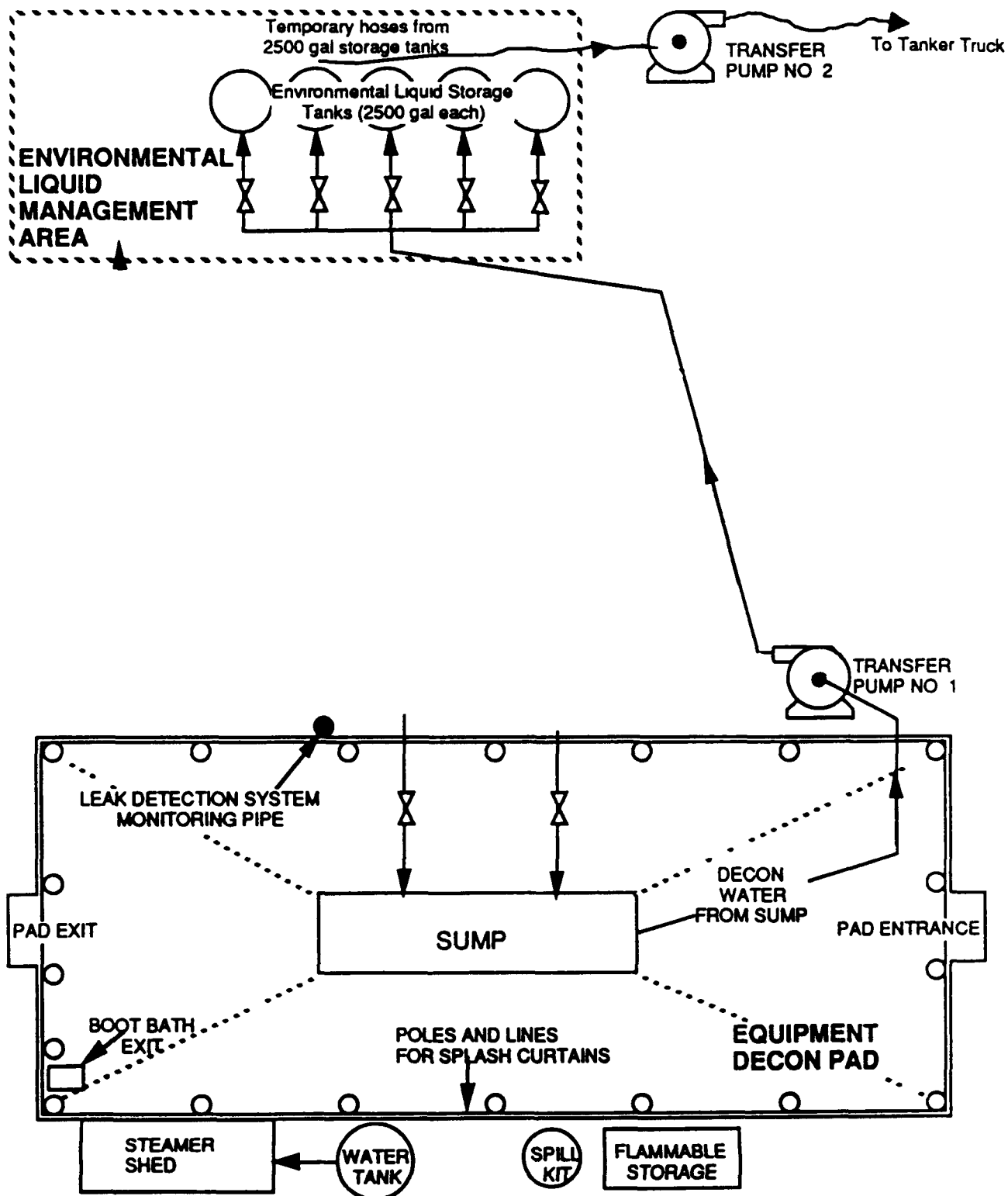
TYPICAL DECONTAMINATION FACILITY PROCESS FLOW DIAGRAM



APPENDIX 3

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TYPICAL DECONTAMINATION PAD LAYOUT



APPENDIX 4

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RMRS-OPS PRO-141 FORM 1

Rocky Flats Environmental Technology Site
PADF Inspection Checklist

RMRS/OPS-PRO 141 Form 1
Rev.0

DATE _____

FACILITY AND EQUIPMENT OPERATIONAL ☐ YES ☐ NO
IF NOT OPERATIONAL EXPLAIN _____

Inspect the Decontamination Facility each day of use or maintenance
Report any unacceptable conditions immediately to the ER Facility Manager
DO NOT commence decontamination operations until all deficiencies are resolved

DECONTAMINATION PAD EQUIPMENT	ACCEPTABLE	NOT ACCEPTABLE	COMMENTS
1 Check the slope of the fill for erosion, cracks and stains			
2 Check the pad coating for cracks, bubbles, stains, or damage			
3 Check pad for cracks, chips or damage			
4 After pumping the sump confirm no liquids are present.			
5 Check curtains for tears and inspect previous curtain repairs			
6 Inspect all tanks, joints, gauges, pipes and couplings for leaks, drips cracks, or signs of damage			
7 Inspect berms around the storage tanks for cracks and signs of erosion			
8 Estimate the remaining capacity of each storage tank			
9 Ensure the clean water tanks levels are adequate			
10 Check tank tie downs			
11 Conduct weekly monitor pipe inspection.			
12 Ensure all signs and labels are in place.			
13 Gauge tanks Tank 6 _____ gallons Tank 7 _____ gallons Tank 8 _____ gallons Tank 9 _____ gallons Tank 10 _____ gallons Ensure 3 feet of headspace for expansion due to freezing.			

Comments

Print Name

Signature

Subcontractor

Phone

DATE _____

FACILITY AND EQUIPMENT OPERATIONAL ☐ YES ☐ NO
IF NOT OPERATIONAL EXPLAIN _____

Inspect the Decontamination Facility each day of use or maintenance
Report any unacceptable conditions immediately to the ER Facility Manager
DO NOT commence decontamination operations until all deficiencies are resolved

DECONTAMINATION PAD EQUIPMENT	ACCEPTABLE	NOT ACCEPTABLE	COMMENTS
1 Check the slope of the fill for erosion cracks and stains			
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3 Check pad for cracks chips or damage			
4 After pumping the sump confirm no liquids are present			
5 Check curtains for tears and inspect previous curtain repairs			
6 Inspect all tanks joints gauges pipes and couplings for leaks drips cracks or signs of damage			
7 Inspect berms around the storage tanks for cracks and signs of erosion			
8 Estimate the remaining capacity of each storage tank			
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